Amendments to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application.

Listing of Claims:

1-36. (canceled)

37. (currently amended) A planning method for optimally deploying network equipment in a network over a period of time, said network including a span disposed between at least two sites, the method comprising:

providing a demand input structure having a plurality of demands to be serviced by said network, each of the demands being associated with a corresponding time point and a demand quantity indicating units of communication capacity;

sorting said plurality of demands by their time points;

starting with a set of the demands having an earliest time point[[,]];

transforming said network into a network model including a multi-nodal directed graph having a plurality of arcs, said transforming being based on a topology of said network[[,]];

optimizing the routing of said set of demands using said multi-nodal directed graph and a cost function associated therewith[[,]];

obtaining network equipment placement information and demand routing information based on said optimizing of the routing of said set of demands~~, and~~;

updating said network model and said cost function associated therewith based on said network equipment placement information and said demand routing information~~,~~ ~~and~~;

repeating said optimizing, said obtaining, and said updating for ~~the~~ remaining time points provided in said demand input structure, using said updated network model and cost function to optimize the routing of the remaining demands associated with said time points; and

outputting a network equipment deploying solution based on the updated network model and the cost function associated therewith when all time points have been processed.

38. (previously presented) The planning method of claim 37, further comprising:

scheduling successive deployment of said network equipment in said network based on said network equipment placement information obtained for each of said time points.

39. (previously presented) The planning method of claim 37, wherein each of said plurality of demands is associated with a selected communications channel rate between said sites.

40. (previously presented) The planning method of claim 39, wherein said selected communications channel rate is the same for each of said plurality of demands.

41. (previously presented) The planning method of claim 39, wherein said selected communications channel rate is different for said plurality of demands.

42. (previously presented) The planning method of claim 37, wherein said demand input structure comprises a data structure residing in a computer-readable medium device.

43. (previously presented) The planning method of claim 37, wherein said plurality of demands comprises a portion of higher priority demands and a portion of lower priority demands.

44. (previously presented) The planning method of claim 43, wherein said transforming, said optimizing, said obtaining, and said updating are performed first for optimizing said portion of higher priority demands.

45. (previously presented) The planning method of claim 44, further comprising optimizing said portion of lower priority demands by using a capacitated shortest path algorithm with respect to each of said lower priority demands.

46. (previously presented) The planning method of claim 37, wherein said network equipment placement information comprises an indication of the presence of an Add/Drop Multiplexer at a selected site.

47. (previously presented) The planning method of claim 37, wherein said network equipment placement information comprises an indication of the absence of an Add/Drop Multiplexer at a selected site.

48. (previously presented) The planning method of claim 37, wherein said cost function comprises a flow cost term and an equipment cost term.

49. (previously presented) The planning method of claim 37, wherein said optimizing is performed by employing an integer programming technique.

50. (previously presented) The planning method of claim 37, wherein said multi-nodal directed graph is derived from a ring structure associated with said network.

51. (previously presented) The planning method of claim 37, wherein the demand quantity indicates a particular multiplexer level.

52. (previously presented) The planning method of claim 37, wherein said optimizing further comprises sorting the plurality of demands by corresponding ones of the demand quantities.

53. (previously presented) The planning method of claim 52, wherein said sorting is performed in descending order based on the corresponding ones of the demand quantities.

54. (previously presented) The planning method of claim of claim 37, wherein said optimizing further comprises providing a time-slot-assignment-compliant solution set.

55. (previously presented) The planning method of claim 54, wherein said time-slot-assignment-compliant demand routing is derived from at least one time-slot-interchange-compliant solution set.